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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Ryota Hirose

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11/15/2006

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EXAMINER

AHMED, SALMAN

ART UNIT

PAPER NUMBER

2616

DATE MAILED: 11/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/846,760	HIROSE ET AL.	
	Examiner	Art Unit	
	Salman Ahmed	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance.. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-22 are pending.

Claims 1-22 are rejected.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1, 2, 4, 5, 11, 12, 14, 15, 17, 18, 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wynn (US PAT 6629137), hereinafter referred to as Wynn in view of Riley et al. (US PAT 5293488), hereinafter referred to as Riley.

In regards to claims 1, 2, 4, 5, 11, 12, 14, 15, 17, 18, 20 and 21, Wynn teaches a plurality of node devices interface (column 5, lines 54-58, the network interface devices 26a,b) in a computer network system including a device (column 5, lines 54-58, the network interface devices 26a or b) connectable to a external network (column 2 lines 25-26, communicate with an external network) for use in directing data using a method and means (column 2 lines 26-29, a local network that includes one or more hosts and a network interface device), comprising: a single (See figure 2 element 56) interface (column 5, lines 54-58, the network interface devices 26a,b may provide address translation at the respective interfaces of the local network 22 with the CATV and DSL networks 24, 27 so that the local network 22 need not be reconfigured through the elimination of existing local addresses and/or the addition of new external network addresses to communicate with the CATV and DSL networks) provided for interfacing with the external network (column 5, lines 54-58, CATV and DSL), and allocated with a plurality of physical addresses (column 5, lines 54-58, existing local addresses) registered for physically discriminating from other devices; and a processor (column 5, line 62, a processor) that executes a receiving process (figure 3 and column 8 line 34, address translation module 66) and a transmitting process (figure 3 and column 8 line 39, address translation module 66) of data through the single interface (See figure 2 element 56); the receiving process includes receiving data having a physical address indicating a destination of the data; comparing the physical address of the received data with the registered physical addresses; competing the receiving process when the physical address of the received data matches with one of the plurality of registered

physical addresses; and otherwise canceling the receiving process when the physical address of the received data matches with none of the plurality of registered physical addresses (column 3 lines 29-34 and column 8 lines 31-36, the external address if being an Internet Protocol (IP) address, then, preferably, the external address request contains the media access control (MAC) address of the network interface device and an IP address of all zeros). Information being sent from the external network (i.e., the CATV network 24) to a host using the external address associated with the host as a destination address. The address translation module 66 may translate the external address used as the destination address for the host into the local address for the host in real-time at block 94 of figure 3); the transmitting process includes detecting a destination of data to be transmitted; selecting one of the plurality of registered physical addresses according to the detected destination of the data to be transmitted; and attaching the selected physical address to the data (column 8 lines 36-42, information being sent from a learned host to the external network using the local address associated with that host as the source address. The address translation module 66 may translate the local address used as the source address by the host into the corresponding network address for the host in real-time at block 96 of figure 3). In regards to claim 2, Wynn teaches the single interface is allocated with a first physical address for use in an Internet domain, and a second physical address for use in a local area network domain (column 5, lines 54-58, the network interface devices 26a,b may provide address translation at the respective interfaces of the local network 22 with the CATV and DSL networks 24, 27 so that the local network 22 need not be reconfigured

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through the elimination of existing local addresses and/or the addition of new external network addresses to communicate with the CATV and DSL networks), and wherein the processor executes the transmitting process such that the selecting step selects the first physical address when the destination of the data to be transmitted is a global IP address, and otherwise selects the second physical address when the destination of the data to be transmitted is a private IP address (column 5, lines 54-58, the network interface devices 26a,b may provide address translation at the respective interfaces of the local network 22 with the CATV and DSL networks 24, 27 so that the local network 22 need not be reconfigured through the elimination of existing local addresses and/or the addition of new external network addresses to communicate with the CATV and DSL networks).

Wynn does not explicitly teach the interface being a single external network interface and a processor that executes a receiving process and a transmitting process of data through the single external network interface.

Riley in the same field of endeavor teaches an interface being a single external network interface (column 5 lines 29-32, the router comprises a plurality of network interface units 20A to 20N operative to transmit and/or receive messages over respective communications networks A to N). Riley in the same field of endeavor further teaches a processor that executes a receiving process and a transmitting process of data through the single external network interface (column 2 lines 60-66, Each said unit includes a local routing manager with input means for receiving messages to be routed including messages newly received by the unit from its associated communications

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arrangement, a first output for messages that are to be transmitted on over the associated communications arrangement, and a second output for other of said messages).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Wynn's system/method by using a single receive and transmit interface for external connection as taught by Riley. The motivation is that a single external network interface is cheaper to implement than having separate interfaces of for both receive and transmit. Such implementation would reduce production cost and provide economic benefit to organizations.

In regards to claim 4, 12, 15, 18 and 21 Wynn further teaches a network device having means for using a method and comprising a single (See figure 2 element 56) network port (column 2 line 3) network port number connectable to a external network, a storage section (figure 2 element 54) that stores a plurality of physical addresses registered for physically discriminating from other network devices and a controller (figure 2 element 52) section that controls the receiver section and the transmitter section.

In regards to claim 11, Wynn further teaches selecting the second physical address when the destination of the data to be transmitted is given as a private IP address which indicates another node device involved in the computer network system is anticipated by (column 3 lines 14-19) a message may be asynchronously received from a host that contains that host's local address or a request that the hosts respond with their respective local addresses may be broadcast on the local network.

In regards to claim 5, 12 and 18 t Wynn further teaches he controller section designating the first physical address when the desired destination of the data to be transmitted is given as a global IP address, and otherwise designates the second physical address when the designated destination of the data to be transmitted is given as a private IP address which indicates another node device involved in the computer network system is anticipated by figure 3 elements 52, 62, 64 and 66 and column 3 lines 14-19.

In regards to claim 17 and 18 Wynn teaches (column 4 lines 41-58) that the invention may take the form of a computer program product on a computer-usable or computer-readable storage medium having computer-usable or computer-readable program code embodied in the medium for use by or in connection with an instruction execution system. In the context of this document, a computer-usable or computer-readable medium may be any medium that can contain, store, communicate, propagate, or transport the program for use by or in connection with the instruction execution system, apparatus, or device.

4. Claims 3, 6-10, 13, 16, 19 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wynn in view of Riley as applied to claim 1 above, and further in view of Abe (Residential Broadband, Second Edition Publisher: Cisco Press Pub Date: December 23, 1999 ISBN: 1-57870-177-5), hereinafter referred to as Abe.

In regards to claims 3, 6, 7, 8, 9, 10, 13, 16, 19 and 22 Wynn and Riley teach using interface device with single external network interface for network connection

using address translation methods between local LAN and internet as described in the rejections of claims 1 and 4 above.

In regards to claims 3, 6 and 10 Wynn and Riley do not explicitly teach the device functioning as a DHCP client in the Internet domain so that the DHCP client is allocated a global IP address from another DHCP server of the Internet domain, and also functioning as a DHCP server in the local area network domain so that the DHCP server allocates a private IP address to another HCP client in the local area network domain. Wherein the processor uses the first physical address for exchanging data with said another DHCP server of the Internet domain, and uses the second physical address for exchanging data with another DHCP client of the local area network domain. In regards to claims 7, 8, 9, 13, 16, 19 and 22 Wynn does not explicitly teach a network device being connectable to a cable modem having a CATV port and a LAN port, the network device comprising: a network interface that is connected to the LAN port of the cable modem.

In regards to claims 3, 6 and 10 Abe in the same field of endeavor teaches (Chapter 3. Cable TV Networks section: Data Services over Cable) the modem obtains an address by using the *Dynamic Host Configuration Protocol (DHCP)*. DHCP is the standard Internet protocol for dynamic assignment of IP addresses. When a subscriber requires an address, the cable modem launches a particular type of broadcast packet, called a DHCP Discover, onto the return path. The CMTS router at the head end receives the DHCP Discover and authenticates the cable modem. It then returns the IP address of the server to the cable modem, and the cable modem sends a DHCP

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request to the DHCP server. The DHCP server returns an IP address to the router, which caches it and relays the information to the subscriber cable modem. Wynn teaches (Chapter 7. Home Networks section: Residential Gateway) a more user-friendly way to enable address acquisition for the home TE is to have the RG operate the Dynamic Host Configuration Protocol (DHCP) server function. With the RG acting as a DHCP Server, it can supply IP addresses to multiple home computers from a pool of addresses provided to it by the carrier. In regards to claims 7, 8, 9, 13, 16, 19 and 22 Abe teaches (Figure 7-5. Residential Gateway Interfaces and Figure 7-2. Home Network Schematic Network Termination (NT)) a network device (RG) being connectable to a cable modem having a CATV port and a LAN port and a plurality of network devices being connectable to the LAN port of the cable modem, the network device comprising: a network interface that is connected to the LAN port of the cable modem

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Wynn and Riley's system/method by incorporating Abe's teaching of DHCP methodology and connection architecture. The motivation is that (As suggested by Abe Chapter 7. Home Networks section: Residential Gateway) it is a more user-friendly way to enable address acquisition. It would be (As suggested by Abe Chapter 3. Cable TV Networks section: Data Services over Cable) customer-unfriendly and would create security problems if the customer were to configure his own IP address. In regards to claims 7, 8, 9, 13, 16, 19 and 22 the motivation is that (As suggested by Abe Chapter 7. Home Networks section: Topology alternatives) such

configuration if used as bus provides economic use of wiring, requires only a single network connection per device, and is well suited to the broadcasting case. Such configuration if used as star isolates traffic per device and therefore can guarantee bit rate per device. This is good for video and for problem isolation. Furthermore, a malfunctioning device would not adversely affect other terminal equipment.

Response to Arguments

5. Applicant's arguments see pages 21-24 of the Remarks section, filed 10/23/2006, with respect to the rejections of claims 1-22 have been fully considered but they are not persuasive.

Applicant argues that (page 22 paragraphs 2-3) the Wynn reference does not disclose, teach or suggest the device specified in independent claim 1, as amended and the Riley reference does not make up for the deficiencies of Wynn. Applicant argues Riley fails to teach that the low level interface hardware 23 includes a plurality of physical addresses; therefore, the combination of Wynn and Riley does not disclose, teach, or suggest "a single external network interface provided for interfacing with the external network, and allocated with a plurality of physical addresses registered for physically discriminating from other devices." However, Examiner respectfully disagrees with the assertion. Riley in the same field of endeavor teaches an interface being a single external network interface (column 5 lines 29-32, the router comprises a plurality of network interface units 20A to 20N operative to transmit and/or receive messages over respective communications networks A to N). Figure 2 shows a single external

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network (any one of units 20A to 20N) interface provided for interfacing with the external network (any one of networks A to N), while Wynn teaches allocated with a plurality of physical addresses registered for physically discriminating from other devices (column 5, lines 54-58, existing local addresses).

Applicant argues that (pages 22-23 paragraphs 4-1) Riley fails to disclose, teach, or suggest "a processor that executes a receiving process and a transmitting process of data through the single external network interface." Applicant argues Riley teaches away from the device specified in independent claim 1; in particular, Riley discloses a local routing manager with an input means for receiving messages to be routed and a pair of outputs through which messages are transmitted and this is distinct from a processor which executing a receiving process and a transmitting process through the single external network interface. However, Examiner respectfully disagrees with the assertion. In view of broadest reasonable interpretation of the claimed language Riley in the same field of endeavor teaches a processor that executes a receiving process and a transmitting process of data through the single external network interface (column 2 lines 60-66, Each said unit includes a local routing manager with input means for receiving messages to be routed including messages newly received by the unit from its associated communications arrangement, a first output for messages that are to be transmitted on over the associated communications arrangement, and a second output for other of said messages). As the Applicant acknowledged Riley discloses a local routing manager (a processor) with an input means (a receiving process) for receiving messages to be routed and a pair of outputs (a transmitting process) through which

messages are transmitted. Riley further teaches the single external network interface (Figure 2, any one of units 20A to 20N). As such Examiner respectfully disagrees with the assertion that Riley teaches away from the device specified in independent claim 1.

As such Claims 4, 7 and 11-22 are rejected for the similar reasons (See Applicant's argument page 23 paragraph 2) cited above.

Similarly, Claims 2-3, 5-6 and 8-10 are rejected for the similar reasons (See Applicant's argument page 23 paragraph 3) cited above.

In regards to claims 3, 6-10, 13, 16, 19 and 22 Applicant argues (see page 23 paragraph 4 and page 24 paragraph 1) that the combination of Wynn, Riley, and Abe does not disclose teach, or suggest a device which includes "a single external network interface provided for interfacing with the external network, and allocated with a plurality of physical addresses registered for physically discriminating from other devices" or "a processor that executes a receiving process and a transmitting process of data through the single external network interface." However, Examiner respectfully disagrees with the assertion for the reasons cited above.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion

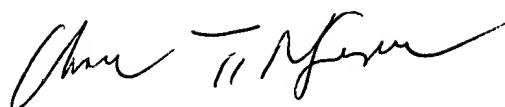
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Salman Ahmed whose telephone number is (571)272-8307. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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SA
11/9/2006

A handwritten signature in black ink, appearing to read "Chau Nguyen", with a stylized flourish at the end.

CHAU NGUYEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600